

We claim:

- 5/15/01
- 09812237 " 072701
1. A medical valve for valving fluid, the valve comprising:
a housing defining a chamber having an inlet and an outlet, the chamber having an interior wall;
a compressible member within the chamber; and
a fluid channel defined by the interior wall for directing fluid received from the inlet toward the outlet.
 2. The medical valve as defined by claim 1 wherein the compressible member comprises a sponge material.
 3. The medical valve as defined by claim 1 wherein the compressible member comprises a balloon device.
 4. The medical valve as defined by claim 1 further comprising:
a plunger having a distal end within the chamber, the plunger controlling the volume of the chamber.
 5. The medical valve as defined by claim 1 wherein the valve is movable between open and closed positions, the compressible member cooperating with the chamber to cause the interior to have a greater volume when the valve is open than when the valve is closed.
 6. The medical valve as defined by claim 1 wherein the interior wall defines an air vent.
 7. The medical valve as defined by claim 1 wherein the compressible member does not occlude fluid flow through the fluid channel.

8. The medical valve as defined by claim 1 wherein the valve is movable between open and closed positions, the compressible member cooperating with the chamber to cause the chamber to have a greater volume for receiving fluid when the valve is open than when the valve is closed.
9. A medical valve for valving fluid, the medical valve having an open mode for permitting fluid flow through the valve, the medical valve also having a closed mode for preventing fluid flow through the valve, the medical valve comprising:
- an interior wall defining a variable volume fluid chamber for receiving fluid;
 - a compressible member within the variable volume fluid chamber, the compressible member capable of displacing fluid within the fluid chamber,
 - the compressible member and interior wall defining a closed chamber volume within the fluid chamber when the valve is in the closed mode,
 - the compressible member and interior wall defining an open chamber volume within the fluid chamber when the valve is in the open mode,
 - the closed chamber volume being no greater than the open chamber volume.
10. The valve as defined by claim 9 wherein the interior wall defines a channel for channeling fluid flow through the valve.
11. The medical valve as defined by claim 9 wherein the compressible member does not occlude fluid flow through the valve.
12. The medical valve as defined by claim 9 wherein the compressible member comprises a sponge material.
13. The medical valve as defined by claim 9 wherein the compressible member comprises a balloon device.

0912237.072701

14. The medical valve as defined by claim 9 further comprising:
a plunger having a distal end within the interior, the plunger controlling the volume of the interior.

15. The medical valve as defined by claim 9 wherein the compressible member is substantially fluid impermeable.

16. A medical valve for valving fluid, the valve permitting fluid flow when in an open mode, the valve preventing fluid flow when in a closed mode, the valve comprising:
an interior wall defining a chamber;
a compressible member within the chamber, the compressible member having a maximum volume and a minimum volume and being capable of displacing fluid within the chamber;
the compressible member having a volume equal to the maximum volume when the valve is in the closed mode,
the compressible member having a volume equal to the minimum volume when the valve is in the open mode.

17. The valve as defined by claim 16 wherein the minimum volume is smaller than the maximum volume.

18. The valve as defined by claim 16 wherein the interior wall defines a channel for channeling fluid through the valve when in the open mode.

19. The valve as defined by claim 16 wherein the compressible member and chamber cooperate to define a closed chamber volume when the valve is in the closed mode, the compressible member and chamber also defining an open chamber volume when the valve is in

09812237.072701



20. The medical valve as defined by claim 16 wherein the compressible member is substantially fluid impermeable.
21. A medical valve for valving fluid, the medical valve comprising:
a housing defining an fluid passageway for directing fluid through the valve, the housing also defining a valve chamber having an inlet for receiving fluid from the fluid passageway;
a compressible member within the chamber, the compressible member dividing the valve chamber into a fluid chamber and a member chamber, the fluid chamber receiving fluid through the inlet and having a fluid outlet for directing fluid to the fluid passageway, the member chamber being defined by the compressible member and a chamber wall; and
a vent defined by the chamber wall, the vent extending through the housing to vent the member chamber,
the compressible member being capable of displacing fluid within the valve chamber.
22. The medical valve as defined by claim 21 wherein the fluid passageway includes a first passageway portion and a second passageway portion, the first passageway portion being substantially orthogonal to the second passageway portion.
23. The medical valve as defined by claim 21 wherein the member chamber has a volume substantially the same as the volume of the member.
24. The medical valve as defined by claim 21 wherein the member chamber has a volume that is greater than the volume of the fluid chamber.

25. The medical valve as defined by claim 21 wherein the medical valve is alternately usable in an open mode that permits fluid flow through the valve, and a closed mode that prevents fluid flow through the valve.
26. The medical valve as defined by claim 25 wherein the member chamber has a volume that is greater than the volume of the fluid chamber when in the closed mode.
27. The medical valve as defined by claim 25 wherein the member chamber has a volume that is smaller than the volume of the fluid chamber when in the open mode.
28. The medical valve as defined by claim 25 wherein the fluid chamber and member chamber each have a variable volume that is dependent upon the mode of the valve.
29. The medical valve as defined by claim 21 wherein the compressible member defines a hollow interior, the compressible member further defining an opening that exposes the hollow interior, the opening being in communication with the vent.
30. The medical valve as defined by claim 29 wherein the hollow interior of the compressible member is sealed from fluid communication with the fluid passageway.
31. The medical valve as defined by claim 21 wherein the compressible member is in an distally bowed configuration that is normally in an uncompressed state.
32. The medical valve as defined by claim 21 wherein the member chamber is defined by the wall and the compressible member, the member chamber being sealed from fluid communication with the fluid passageway.

33. The medical valve as defined by claim 21 further comprising:
a spring within the compressible member, the spring normally urging the compressible member to an uncompressed state.
34. The medical valve as defined by claim 21 wherein the compressible member is configured to be a spring.
35. The medical valve as defined by claim 21 further comprising a movable cannula defining a part of the fluid passageway, the movable cannula being in contact with the compressible member.
36. A medical valve for valving fluid, the medical valve comprising:
a housing defining a fluid passageway for directing fluid through the valve;
a valve chamber defined by the housing and being in communication with the fluid passageway;
means for reducing the volume of the valve chamber; and
means for venting the reducing means.
37. The valve as defined by claim 36 wherein the reducing means comprises a compressible member.
38. The valve as defined by claim 36 wherein the venting means comprises a channel defined by the housing, the channel extending from the valve chamber.
39. The valve as defined by claim 36 further comprising:
means for opening the fluid chamber for permitting fluid flow through the valve, the opening means compressing the reducing means as the fluid channel is opened.

09812237-072701
T02270-1E227860